



GRSE18S-P1121V

GR18

CYLINDRICAL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

GRSE18S-P1121V | GR18

CYLINDRICAL PHOTOELECTRIC SENSORS



Illustration may differ

Ordering information

| Type | Part no. |
|----------------|----------|
| GRSE18S-P1121V | 1085767 |

Other models and accessories → www.sick.com/GR18



Detailed technical data

Features

| | | | | | |
|--|---|-----------|--|------------|--|
| Functional principle | Through-beam photoelectric sensor | | | | |
| Dimensions (W x H x D) | 18 mm x 18 mm x 55.9 mm | | | | |
| Housing design (light emission) | Cylindrical | | | | |
| Housing length | 55.9 mm | | | | |
| Thread length | 31.7 mm | | | | |
| Thread diameter (housing) | M18 x 1 | | | | |
| Optical axis | Axial | | | | |
| Sensing range max. | 0 m ... 15 m | | | | |
| Sensing range | 0 m ... 10 m | | | | |
| Type of light | Infrared light | | | | |
| Light source | LED ¹⁾ | | | | |
| Light spot size (distance) | Ø 420 mm (10 m) | | | | |
| Wave length | 850 nm | | | | |
| Adjustment | None | | | | |
| Indication | <table border="0"> <tbody> <tr> <td style="padding-right: 20px;">LED green</td> <td>Operating indicator Static on: power on</td> </tr> <tr> <td>LED yellow</td> <td>Status of received light beam Static on: object not present Static off: object present</td> </tr> </tbody> </table> | LED green | Operating indicator Static on: power on | LED yellow | Status of received light beam Static on: object not present Static off: object present |
| LED green | Operating indicator Static on: power on | | | | |
| LED yellow | Status of received light beam Static on: object not present Static off: object present | | | | |
| Special applications | Hygienic and washdown zones | | | | |

¹⁾ Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

| | |
|--|--|
| Supply voltage U_B | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | < 5 V _{pp} ²⁾ |
| Current consumption | 30 mA |
| Switching output | PNP |
| Output function | Complementary |
| Switching mode | Light/dark switching ³⁾ |
| Signal voltage PNP HIGH/LOW | V _S - (≤ 3 V) / approx. 0 V |
| Output current I_{max.} | ≤ 100 mA ⁴⁾ |
| Response time | < 500 μs ⁵⁾ |
| Switching frequency | 1,000 Hz ⁶⁾ |
| Connection type | Cable, 4-wire, 2 m ⁷⁾ |
| Cable material | Plastic, PVC |
| Conductor cross section | 0.14 mm ² |
| Cable diameter | Ø 4.8 mm |
| Circuit protection | A ⁸⁾ B ⁹⁾ D ¹⁰⁾ |
| Protection class | III |
| Weight | 190 g |
| Housing material | Metal, Stainless steel V4A (1.4404, 316L) |
| Optics material | Plastic, PMMA |
| Tightening torque, max. | 90 Nm |
| Enclosure rating | IP67 IP68 ¹¹⁾ IP69K ¹²⁾ |
| Items supplied | Fastening nuts (4 x) |
| Electromagnetic compatibility (EMC) | EN 60947-5-2 |
| Test input | Sender OFF at "Test" 0 V |
| Ambient operating temperature | -25 °C ... +55 °C ¹³⁾ |
| Ambient temperature, storage | -30 °C ... +75 °C |

¹⁾ Limit values. Operated in short-circuit protected network: max. 8 A.

²⁾ May not fall below or exceed U_v tolerances.

³⁾ Q = light switching; \bar{Q} = dark switching.

⁴⁾ At U_v > 24 V or ambient temperature > 49 °C, I_A max. = 50 mA.

⁵⁾ Signal transit time with resistive load.

⁶⁾ With light/dark ratio 1:1.

⁷⁾ Do not bend below 0 °C.

⁸⁾ A = V_S connections reverse-polarity protected.

⁹⁾ B = inputs and output reverse-polarity protected.

¹⁰⁾ D = outputs overcurrent and short-circuit protected.

¹¹⁾ According to EN 60529 (10 m water depth / 24 h).

¹²⁾ According to ISO 20653:2013-03.

¹³⁾ At U_v ≤ 24V and I_A < 50mA.

| | |
|---|---|
| UL File No. | NRKH.E348498 & NRKH7.E348498 |
| Part number of individual components | 2091201 GRS18S-D1121V 2091357 GRE18S-P1111V |

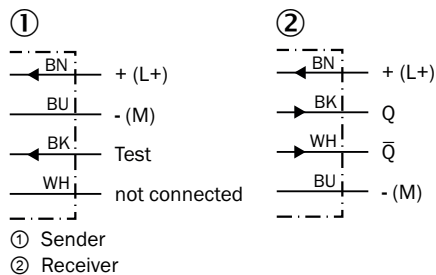
- 1) Limit values. Operated in short-circuit protected network: max. 8 A.
- 2) May not fall below or exceed U_V tolerances.
- 3) Q = light switching; \bar{Q} = dark switching.
- 4) At $U_V > 24$ V or ambient temperature > 49 °C, I_A max. = 50 mA.
- 5) Signal transit time with resistive load.
- 6) With light/dark ratio 1:1.
- 7) Do not bend below 0 °C.
- 8) A = V_S connections reverse-polarity protected.
- 9) B = inputs and output reverse-polarity protected.
- 10) D = outputs overcurrent and short-circuit protected.
- 11) According to EN 60529 (10 m water depth / 24 h).
- 12) According to ISO 20653:2013-03.
- 13) At $U_V \leq 24$ V and $I_A < 50$ mA.

Classifications

| | |
|-----------------------|----------|
| ECLASS 5.0 | 27270901 |
| ECLASS 5.1.4 | 27270901 |
| ECLASS 6.0 | 27270901 |
| ECLASS 6.2 | 27270901 |
| ECLASS 7.0 | 27270901 |
| ECLASS 8.0 | 27270901 |
| ECLASS 8.1 | 27270901 |
| ECLASS 9.0 | 27270901 |
| ECLASS 10.0 | 27270901 |
| ECLASS 11.0 | 27270901 |
| ECLASS 12.0 | 27270901 |
| ETIM 5.0 | EC002716 |
| ETIM 6.0 | EC002716 |
| ETIM 7.0 | EC002716 |
| ETIM 8.0 | EC002716 |
| UNSPSC 16.0901 | 39121528 |

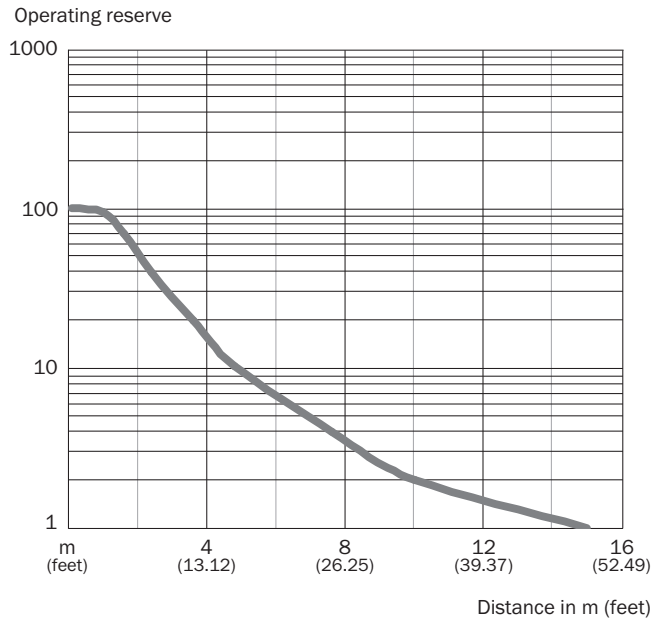
Connection diagram

Cd-088



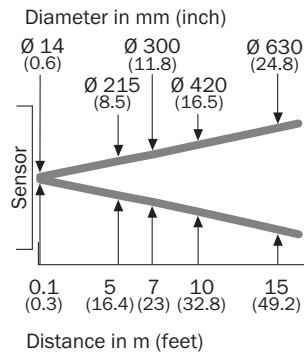
Characteristic curve

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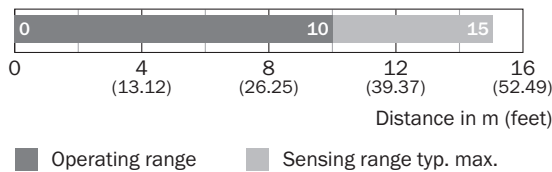
Light spot size

GRSE18, infrared light



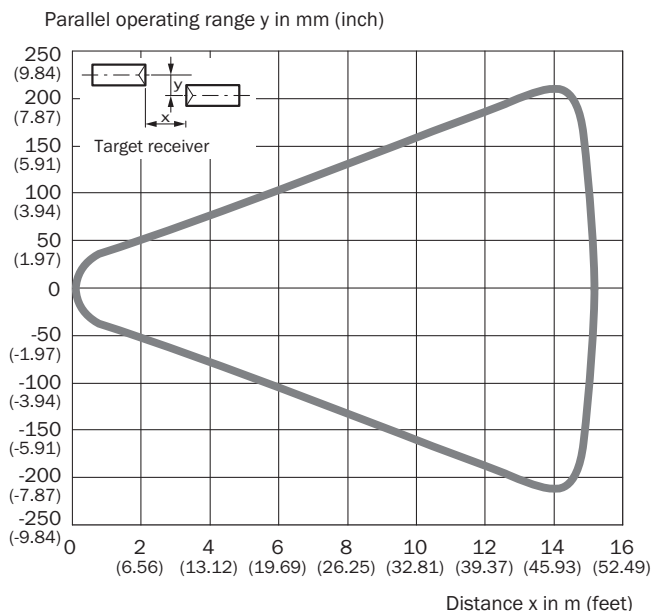
Sensing range diagram

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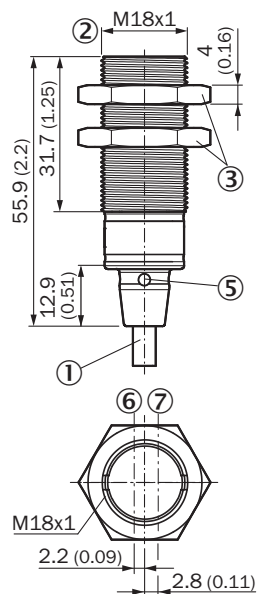
Response range

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Dimensional drawing (Dimensions in mm (inch))



GR18S Inox, cable, straight



- ① Connection
- ② Threaded mounting hole M18 x 1
- ③ Fastening nuts (2 x); width across 24, stainless steel
- ④ LED indicator (4 x)
- ⑥ Optical axis, receiver
- ⑦ Optical axis, sender

Recommended accessories

Other models and accessories → www.sick.com/GR18

| | Brief description | Type | Part no. |
|---|--|-------------|----------|
| Mounting brackets and plates | | | |
|  | Mounting bracket for M18 sensors, stainless steel, without mounting hardware | BEF-WN-M18N | 5320947 |
| Others | | | |
|  | <ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 4-pin, straight, A-coded • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm² | STE-1204-G | 6009932 |

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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